

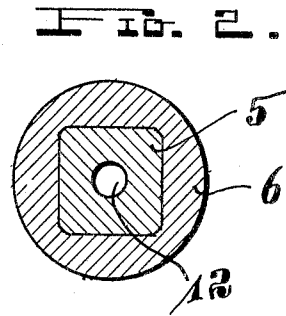
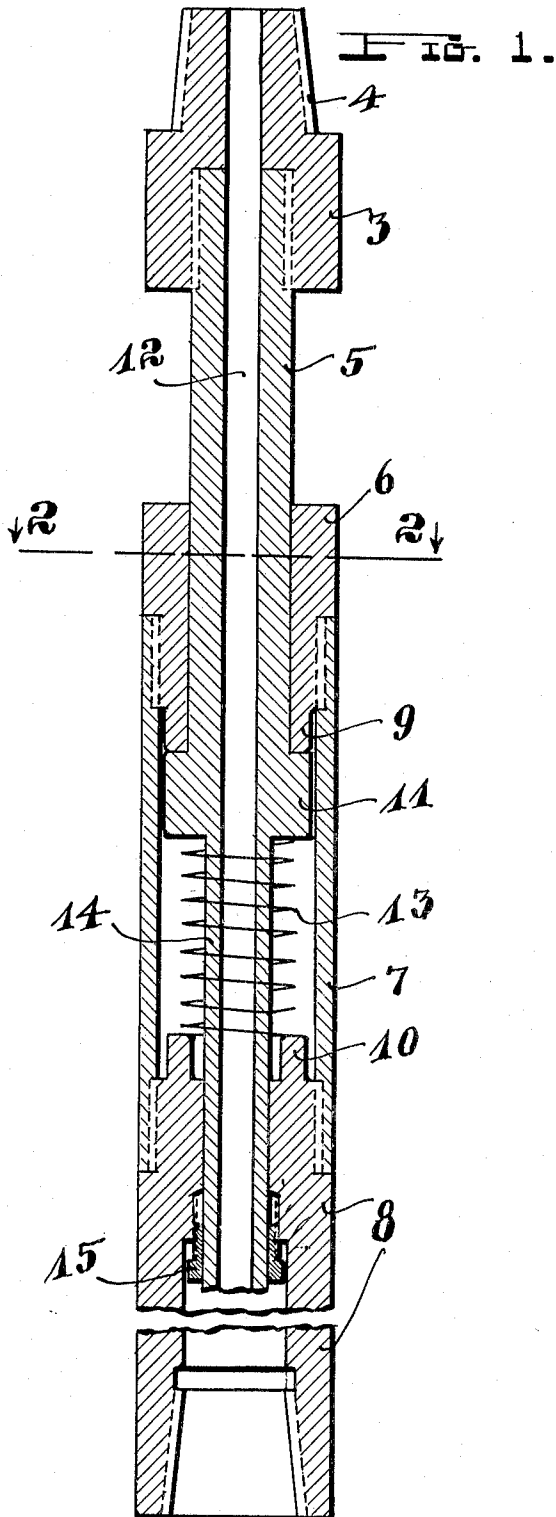
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L. J. GIANELLA

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ROTARY JAR

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INVENTOR:

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UNITED STATES PATENT OFFICE.

LEO J. GIANELLA, OF LONG BEACH, CALIFORNIA.

ROTARY JAR.

Application filed August 29, 1922. Serial No. 584,984.

To all whom it may concern:

Be it known that I, LEO J. GIANELLA, a citizen of the United States, residing at Long Beach, in the county of Los Angeles and State of California, have invented a new and useful Rotary Jar, of which the following is a specification.

This invention relates to devices used in deep wells for applying hard jerks, impacts, or jars, to loosen tools or any connected part or material from any crevices or cavings, or to apply impacts to the working tools for other operations in a well.

One of the objects of this invention is to provide jars to be used in connection with rotary drilling machinery.

Another object is to provide jars with circulating passages.

Other objects will appear from the following description and appended claims as well as from the accompanying drawing, in which—

Fig. 1 is a longitudinal midsectional view of a jar, embodying the invention.

Fig. 2 is a cross section on line 2—2 of Fig. 1.

In so-called rotary drilling, the working stem, or the working string of tools consists normally mainly of tubular members, the inside of the tubular members being used to inject the rinsing fluid into the well.

Common drill jars cannot very well be used with the rotary system, first, not being adapted for rotary work on account of the peculiar link-connection within the jars, and, secondly, not being provided with a passage for the rinsing operation.

In the device illustrated in the drawing, the top end 3 is preferably provided with a standard quick-engaging taper pin 4, to facilitate an exchanging of the tool with other tools used for well drilling. The downwardly extending stem 5 is provided with anti-rotating surfaces on the outside, to prevent a rotating within the cooperating member 6; in Fig. 2, the stem 5 being illustrated of square cross section, but it will easily be understood that a non-turning between the two members 5 and 6 can be accomplished by various slightly modified forms, as any irregularity in the cross section, any number of sides or corners instead of the four sides and four corners illustrated in Fig. 2, or key and key-way between the stem 5 and the member 6, without departing from the principle disclosed here-

by, and without requiring further illustration or description.

The member 6 forms the closing end or cap in the upper end of the tube 7. Another cap or connecting end 8 is provided on the lower end of the tube 7. The inner terminations or faces of the members 6 and 8 are provided with extension ends or wearing portions 9 and 10, to abut with the shouldered head 11 of the stem 5. In shifting or moving longitudinally in one direction, the head 11 abuts upon the wearing portion 9 of the member 6; and, in shifting or moving in the opposite direction, the head 11 abuts upon the wearing portion 10 of the member 8.

The stem 5 is provided with a passage or conduit 12, to facilitate a rinsing or passing of fluids in the manner commonly in use with the rotary system of drilling wells.

The head 11 is preferably suitably smaller than the inside of the tube 7, to facilitate a free moving of the head from the abutment 9 to the abutment 10, so that any fluids or other matter accumulating within the tube 7 may freely pass around the head from one side to the other while the head is moving back and forth within the tube. However, in some operations in well drilling, it is sometimes desirable to avoid a hard impact. For such particular purposes this tool can easily be slightly modified by providing a cushioning effect between the head and the wearing portions 9 and 10, either, by disposing a cushioning fluid within the tube 7 and allowing only a slow passing of the fluid from one to the other side of the head 11 by providing a proportionally narrow space between the head 11 and the tube 7, or disposing springs between the head 11 and the abutments 9 and 10, as indicated at 13.

Since more commonly a hard jarring is desired, and no fluid particularly required within the tube, the stem 5 is provided with an extension end 14, to pass the fluid from the stem 5 directly into the lower connecting end 8. A stuffing box 15 is eventually desirable between the tube-extension 14 and the lower connecting end 8, but not absolutely necessary.

Having thus described my invention, I claim:

1. In a rotary jar, a stem made in sections having a passage therethrough and having telescopic and non-rotating engage-

- ment with one another, one section having abutments spaced axially and laterally in relation to the other section and adapted to facilitate free movements between the sections even when the abutments spread due to wearing, and the other section having a shouldered head adapted to abut against the abutments in the first-named section alternately.
2. In a jar, a stem made in sections, one of the sections being of tubular form having spaced abutments within, the other section having a shouldered head disposed within the tubular section spaced between the abutments of the tubular section, an extension end on the head projecting outwardly from the tubular section and having non-rotating sliding engagement with one end of the tubular section, and another extension end projecting in the opposite direction from the head and extending outwardly through the opposite end of the tubular section, the second-named section having a passage therethrough extending through the first-named section, and a stuffing box between the second-named extension end and the first-named section to form a non-leaking passage through the whole structure.
- In testimony that I claim the foregoing as my invention I have signed my name in the presence of two subscribing witnesses.

LEO J. GIANELLA.

Witnesses:

O. H. KRUEGER,
JESSIE A. MANOCK.